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I, GAYE TURNER, ACTING TEAM LEADER EXAMINATION SUPPORT & SALES hereby certify that annexed is a true copy of the Complete specification in connection with Application No. 10025/00 for a Petty patent by ALLIED CHEFS PTY LIMITED filed on 07 January 2000.

WITNESS my hand this
Twenty-sixth day of February 2001

GAYE TURNER
ACTING TEAM LEADER
EXAMINATION SUPPORT & SALES



AUSTRALIA
Patents Act, 1990
ORIGINAL
COMPLETE SPECIFICATION
PETTY PATENT

TO BE COMPLETED BY THE APPLICANT

NAME OF APPLICANT: ALLIED CHEFS PTY LIMITED
ACN 071 961 718

ACTUAL INVENTOR: PAUL TASSES

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INVENTION TITLE: PROCESS AND APPARATUS FOR
PREPARING BULK MEALS

**DETAILS OF ASSOCIATED
PROVISIONAL APPLICATION NO(S):** NIL

The following statement is a full description of this invention including the best method of performing it known to me:-

The present invention relates to a process for preparing bulk meals of the kind served to passengers in aircraft or for other large gatherings of people, and to a carrier tray that carries the meal during the freezing stage of the preparation process and that is adapted for easy transfer of the meal to a like
5 sized serving dish.

The preparation of bulk meals (being a large quantity of meals presented in universal serving dishes) has conventionally been a time consuming, high level handling operation that occasionally exposed the meal to risk of bacterial contamination prior to serving.

10 It is an object of the present invention to provide a process for preparing bulk meals that is quick, easy and utilizes a carrier tray of a size and shape that corresponds substantially to that of a serving dish into which the meal carried in the carrier tray is to be transferred.

According to the invention, there is provided a process for preparing
15 bulk meals to be served to a large gathering of people, comprising:-

- (i) providing a carrier tray for each meal to be served,
- (ii) introducing the meal into each carrier tray under conditions that inhibit microorganism contamination of the meal,
- (iii) freezing the meal in each carrier to a temperature that further
20 inhibits microorganism contamination of the meal until the meal is ready to be served,
- (iv) providing a serving dish for each carrier tray wherein the serving dish is of a size and shape that corresponds substantially to that of the carrier tray, and
- 25 (v) manipulating each carrier tray in such a way that the meal therein is transferred into its respective serving dish for serving.

Preferably, the carrier tray is fabricated of a flexible plastic.

It is also preferred that the carrier tray is manipulated by applying finger pressure thereon so as to cause the frozen meal to be released from the carrier tray and placed into the serving dish.

5 In order that the invention may be readily understood and put into practical effect, reference will now be made to the following description of a preferred embodiment of the process of the present invention.

10 A carrier tray, fabricated of a transparent, flexible plastic and having a size and shape that matches that of a ceramic serving dish, passes along a processing line where various foods comprising the meal are introduced into the tray at the desired positions. Cooked food must be maintained at all times before and during this operation at above 60°C to comply with health requirements.

15 When the introduction of food into the tray has been completed, the tray quickly passes through a nitrogen tunnel at -130°C where the meal therein is snap frozen to no more than 5°C, and the tray is then exposed to a batch blast freezer which freezes the meal further to a range of between -18°C and -28°C to deactivate bacteria and other microorganisms. Alternatively, the nitrogen tunnel may, in addition to snap freezing the meal, be used to bring the
20 temperature of the meal to the range of between -18°C and -28°C. The duration of the freezing operation need not be longer than about 7 minutes to fully deactivate the microorganisms.

25 After freezing, the carrier trays are packed into cartons or other storage assembly in a temperature controlled packing room maintained at between about 8°C and 14°C and then palletized in the same room before being transferred into a storage freezer operating at between -18°C to -28°C and then transported by refrigerated transport to wholesalers or other points of sale.

Subsequent storage of the tray with its frozen meal in a freezer is necessary before it is utilized as a meal for a consumer.

Prior to consumption, for some meals the tray is placed upside down over a ceramic serving dish and the tray is so pressed and distorted that the frozen meal is eased out of the tray and into the serving dish. For other foods, the tray is held upright whilst the frozen meal is eased out of the tray by gentle finger pressure and distortion of the flexible plastic walls of the tray. The flexible plastic used in the fabrication of the tray allows the manipulator to press or squeeze gently or otherwise tease the meal out of the tray with no or minimal disruption to the meal. The frozen meal in the ceramic serving dish may then be placed in a microwave oven where it is heated to serving temperature before presentation to the consumer for consumption.

The reusable carrier tray is manufactured according to a size and shape that corresponds to the serving dish into which the meal is to be transferred. For example, an entree meal may require a different serving dish, and hence a different carrier tray, than a main meal, and even different types of main meals may require differently sized serving dishes. A die for the carrier tray is first manufactured to suit the intended meal for the carrier tray. Clearly, a serving dish for the intended meal should, when manufactured, be of corresponding size and shape to the carrier tray made by the die. The carrier tray, and thus its die, may be ribbed or have other structural features that provide the carrier tray with an aesthetically pleasing appearance or contribute to improved function, say, by reinforcing its strength and rigidity or by making it easier or safer to hold or otherwise manipulate. The carrier tray can be manufactured in large quantities from its die and utilized in a processing line where the meal is systematically introduced and frozen as described above.

The carrier tray may be reusable by the end user after its contents have been released therefrom by virtue of either the recyclable nature of the plastic used in its fabrication or its sterilizability which enables it to be refilled.

5 The flexible properties of the plastic must withstand the temperature conditions it will experience during the freezing operation so as to ensure viability of the tray structure and its ability to be manipulated for releasing the meal from the tray into the serving dish.

The carrier tray may additionally be stackable.

10 Various modifications may be made in details of design and construction without departing from the scope or ambit of the invention.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A process for preparing bulk meals to be served to a large gathering of people, comprising:-

- (i) providing a carrier tray for each meal to be served,
- (ii) introducing the meal into each carrier tray under conditions that inhibit microorganism contamination of the meal,
- (iii) freezing the meal in each carrier to a temperature that further inhibits microorganism contamination of the meal until the meal is ready to be served,
- (iv) providing a serving dish for each carrier tray, wherein the serving dish is of a size and shape that corresponds substantially to that of the carrier tray, and
- (v) manipulating each carrier tray in such a way that the meal therein is transferred into its respective serving dish for serving.

2. The process of claim 1 for preparing bulk meals wherein the carrier tray is fabricated of a flexible plastic.

3. The processes of claim 1 or claim 2 for preparing bulk meals wherein the carrier tray is manipulated by applying finger pressure thereon so as to cause the frozen meal to be released from the carrier tray and placed into the serving dish.

Dated this 6th day of January 2000

ALLIED CHEFS PTY LIMITED
Patent Attorneys for the Applicant
PETER MAXWELL & ASSOCIATES

ABSTRACT

A process for preparing bulk meals to be served to a large gathering of people, comprising:-

- (i) providing a carrier tray for each meal to be served,
- (ii) introducing the meal into each carrier tray under conditions that inhibit microorganism contamination of the meal,
- (iii) freezing the meal in each carrier to a temperature that further inhibits microorganism contamination of the meal until the meal is ready to be served,
- (iv) providing a serving dish for each carrier tray, wherein the serving dish is of a size and shape that corresponds substantially to that of the carrier tray, and
- (v) manipulating each carrier tray in such a way that the meal therein is transferred into its respective serving dish for serving.